

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Proceeding by the Department on its own Motion to Implement	)	
The Requirements of the Federal Communications Commission's	)	D.T.E. 03-60
Triennial Review Order Regarding Switching for Mass Market	)	(Track A)
Customers	)	

**REBUTTAL TESTIMONY OF**

**EARLE JENKINS**

**ON BEHALF OF**

**WORLDCOM, Inc. ("MCI")**

**February 6, 2004**

**PUBLIC VERSION**

**I. INTRODUCTION**

**Q. PLEASE STATE YOUR FULL NAME, OCCUPATION AND BUSINESS ADDRESS.**

A. My name is Earle Jenkins. I am President of SHS Consulting, a consulting practice specializing in telecommunications issues. My business address is P.O. Box 192, Holderness, N.H.

**Q: PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

A. I received a B.A. *cum laude* from Franklin Pierce College and an M.B.A. from Boston University.

**Q. PLEASE SUMMARIZE YOUR PROFESSIONAL BACKGROUND.**

A. I have over thirty-five years of operations experience in the telecommunications industry. My consulting practice, which I established in June 1996, focuses on Telco operations management, process evaluation and improvement. My consulting clients have included equipment manufacturers, CLECs, long distance carriers and large telcos in the United States as well as in Holland, England, Hungary and Canada.

Prior to launching my consulting business, I was employed by NYNEX Corp. for 29 years. My career spanned all levels of operations responsibility, as I progressed from central office craft technician to Vice President. As Vice

1 President, I was responsible for the implementation of maintenance and workforce  
2 management process improvements throughout the NYNEX footprint.

3 In 2001, I was recruited by a United Kingdom-based company, FLAG  
4 Telecom, to establish a field, customer care, provisioning, and Network  
5 Operations Center (“NOC”) organization. As Vice President–Operations, I  
6 supervised the successful development and implementation of an Operations Plan  
7 for a worldwide organization responsible for the management of a global fiber-  
8 optic submarine and terrestrial network.

9 In 2002, I returned to the United States and resumed my private consulting  
10 practice.

11 I have testified a number of times before state regulatory commissions on matters  
12 regarding nonrecurring charges for unbundled network elements. The details of  
13 my background are included in my curriculum vitae, attached hereto as  
14 Attachment 1.

15 **Q. ON WHOSE BEHALF WAS THIS TESTIMONY PREPARED?**

16 A. This testimony was prepared on behalf of WorldCom, Inc. (“MCI”).

17 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

18 A. The purpose of this testimony is to describe why operational, network and in some  
19 cases technological factors give rise to impairment, and to describe how CLECs  
20 generally, and MCI specifically, are impaired in their effort to serve the mass  
21 market without access to unbundled switching in today’s environment.

1           To the extent that Verizon has identified carriers who Verizon believes  
2           qualify as trigger companies for unbundled local switching, this testimony  
3           demonstrates why identifying such companies is not a mere counting exercise.  
4           Specifically, the FCC required that a trigger company “should be actively  
5           providing voice service to mass market customers in the market.”<sup>1</sup> If a carrier is  
6           only providing a small amount of service in a particular market, it is questionable  
7           whether such carrier is “actively” providing voice service. As described in this  
8           testimony, providing local service via unbundled loops is an extremely difficult  
9           endeavor that involves substantial manual work. If a carrier is not actively  
10          providing service, it is difficult to determine that such carrier has overcome the  
11          barriers to entry that exist in an unbundled loop world, which barriers are  
12          described in this testimony.

13          Similarly, in conducting the trigger analysis, state commissions must  
14          determine whether the identified trigger companies “are currently offering and  
15          able to provide service, ***and are likely to continue to do so.***”<sup>2</sup> If the operational  
16          issues described in this testimony are not overcome, then it is highly unlikely that  
17          carriers, including the current unbundled loop-based providers, will be able to  
18          continue providing service via UNE-L, as Verizon will be unable to handle the

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<sup>1</sup> *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, and Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98 & 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, FCC 03-36 (rel. Aug. 21, 2003) (“*Triennial Review Order*” or “*TRO*”), ¶499.

1 large volumes of unbundled loop orders that will be placed if all carriers provide  
2 service via unbundled loops instead of the Unbundled Network Element-Platform  
3 (“UNE-P”). Thus, so long as the impairment issues in this testimony are not  
4 overcome, The Department should not find that the companies identified by  
5 Verizon meet the criteria for the self-provisioning trigger for unbundled local  
6 switching. At paragraph 419 of its *Triennial Review Order*, the FCC found, on a  
7 national basis, that competitive local exchange carriers (“CLECs”) are impaired  
8 without access to unbundled local switching (“ULS”) when attempting to serve  
9 the “mass market.” The FCC pointed specifically to certain economic and  
10 operational criteria that served as the basis for its impairment finding, and asked  
11 state commissions to review these issues in more detail as they contemplate  
12 whether the finding of impairment should be overturned in any of the  
13 telecommunications markets within their jurisdictions.<sup>3</sup> At paragraph 476 of the  
14 *TRO*, the FCC describes a number of economic and operational factors, including  
15 issues related to ILEC unbundling performance, collocation and the lack of  
16 processes and procedures facilitating the transfer of loops from one CLEC’s  
17 switch to another CLEC’s switch. The FCC specifically identified these types of  
18 issues as those it believed could add to the impairment faced by CLECs  
19 attempting to provide services via a UNE loop (“UNE-L”) as compared to the

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<sup>2</sup> *Id.* at ¶500.

<sup>3</sup> *Id.* at ¶493.

1 relative ease with which CLECs can provide such services utilizing the UNE  
2 platform.

3 **Q. IS YOUR TESTIMONY PERTINENT TO THE TRIGGERS ISSUES?**

4 A. Yes. As MCI witness Michael Pelcovits discusses in his testimony, the trigger  
5 analysis is meant to examine whether mass markets consumers have three real and  
6 current choices available to them by facilities-based carriers in a given market.  
7 The stated intention of the trigger analysis is to give weight to evidence that  
8 carriers in the real world are actually providing service to mass market customers  
9 without UNE-P, and that those carriers could continue to serve mass market  
10 customers within the identified market if UNE-P were discontinued. These  
11 operational issues are also relevant in determining the proper definition of the  
12 market, as discussed more fully in the testimony of Mr. Pelcovits. If “triggering”  
13 carriers are able to actively provide services without UNE-P throughout the  
14 relevant market today (and have the ability to continue providing it in the future)  
15 those alleged "triggering" companies must have overcome, in some way,  
16 operational issues related to accessing Verizon’s loop facilities. Nonetheless, to  
17 qualify as a legitimate “trigger,” the carrier would be required to overcome these  
18 obstacles on a going forward basis,<sup>4</sup> and perhaps to overcome them in areas of the  
19 market wherein it does not currently offer services. As such, in evaluating the

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<sup>4</sup> See *Triennial Review Order*, ¶500 wherein it states: “The key consideration to be examined by state commissions is whether the providers are currently offering and able to provide service, *and are likely to continue to do so.*” [emphasis added].

1 legitimacy of an identified trigger company, the Department needs to understand  
2 what operational issues exist relative to a UNE-L delivery strategy, and how the  
3 identified trigger company fares relative to overcoming those obstacles throughout  
4 the market, both today and in the future.

5 **Q. BEFORE SUMMARIZING YOUR TESTIMONY, DO YOU HAVE ANY**  
6 **GENERAL COMMENTS?**

7  
8 A. Yes, I do. I believe it is critical to highlight the fact that UNE-P is successful  
9 today as a tool for mass market competition in large part because (1) a host of  
10 talented people and an enormous number of resources (Department resources,  
11 CLEC resources and ILEC resources alike) were dedicated to its development as a  
12 commercially viable delivery platform over a period of many years (with the last  
13 four years exhibiting the most focused efforts) and (2) because it involves the end-  
14 to-end lease of ILEC facilities, UNE-P provides CLECs access to the customer's  
15 loop in much the same manner as that available to the ILEC. Further, it should be  
16 noted that much of the success of UNE-P must be attributed to the cooperation  
17 (however reluctant) on the part of the ILECs to overcome operational and  
18 business-related barriers, based almost solely on their desire for §271 relief.

19 To assume that UNE-L, which requires the connection of an unbundled  
20 loop facility with the CLEC's switch, will overcome more challenging  
21 operational, technical and network hurdles in a mere 9 month timeframe is not  
22 sensible. Further, to assume such hurdles can be overcome in this limited  
23 timeframe without similar incentives on the part of the ILECs who have, for the

1 most part, already been released from market restrictions via §271 is even more  
2 difficult to support. Similar to our experience with UNE-P, it is more logical to  
3 assume that the operational and technological issues giving rise to impairment  
4 will be resolved over time, and true loop portability – as described throughout this  
5 testimony - will become a reality only with the guidance and oversight of state  
6 commissions and proper incentives for ILEC cooperation.

7 **Q. ARE THERE PARTICULAR ISSUES THE DEPARTMENT SHOULD**  
8 **KEEP IN MIND RELATIVE TO PROVIDING SERVICE THROUGH AN**  
9 **UNBUNDLED LOOP SERVICE DELIVERY METHOD?**

10  
11 A. Yes. To the extent this Department determines that the UNE-L strategy should  
12 become more widely implemented, it must recognize that transferring a  
13 customer's service from the local switch of one carrier to that of another relies  
14 upon numerous Operational Support Systems ("OSS"), processes and procedures  
15 as well as the availability and reliability of network elements, comprising a chain  
16 of connectivity between the customer and his/her local service provider of choice.  
17 Because of this necessary chain of connectivity, even if one assumes that Verizon  
18 hot cut processes can become seamless at some point in the future, CLECs are  
19 likely to remain impaired as a result of not one, but numerous other operational  
20 and technological issues affecting loops, collocation and transport.<sup>5</sup> Hence, it is  
21 absolutely imperative that the Department remain focused on each of these  
22 individual issues when evaluating whether companies are actively serving the



1 market and will be able to continue actively serving the market through unbundled  
2 loops, and keep an unwavering eye on the primary objective - to ensure that when  
3 moving to an unbundled loop world, mass market consumers can, at ever  
4 increasing volumes, transfer their services from one facilities-based local service  
5 provider to another without service disruption or other service impacting  
6 problems.

7  
8 **Q. ARE THERE BENCHMARKS AGAINST WHICH UNE-L**  
9 **PROVISIONING PROCESSES LIKE THE BATCH HOT CUT PROCESS**  
10 **SHOULD BE MEASURED RELATIVE TO THE SEAMLESSNESS AND**  
11 **RELIABILITY YOU ALLUDE TO ABOVE?**

12  
13 A. I will, throughout this testimony, point the Department to the largely seamless and  
14 reliable nature of the existing UNE-P process as the benchmark to which UNE-L  
15 provisioning processes should be held if impairment is to be overcome. A move  
16 to UNE-L as a mass market delivery method simply cannot occur until Verizon's  
17 daily processes can support the seamless and reliable provisioning of loops to  
18 multiple carriers at commercial volumes on a day-to-day basis consistent with the  
19 manner in which they currently accommodate CLEC orders via UNE-P.

20 **Q. PLEASE BRIEFLY SUMMARIZE YOUR CONCLUSIONS.**

21 A. The Department must carefully look at the details related to a company's  
22 provisioning of service to mass markets customers via unbundled loops before

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<sup>5</sup> Indeed, the FCC found that hot cuts are not the only issue that may give rise to impairment. See *TRO*, ¶476.

1 determining that a company is indeed a trigger company. First, if a company is  
2 using its switch to only serve business customers and is not serving any residential  
3 customers, that should speak volumes as to the company's ability to overcome the  
4 impairment issues discussed throughout this testimony and should be indicative of  
5 the fact that the company is not actively serving the market. Second, even if a  
6 company is serving residential customers in a market, if it is only a small amount  
7 of residential customers, that company should not be deemed to be actively  
8 serving the market. Further, the Department must evaluate whether companies  
9 will be able to continue providing service and are likely to continue providing  
10 service if the entire competitive local residential market in Massachusetts is  
11 forced to move to an unbundled loop service delivery method. If the impairment  
12 issues raised in this testimony related to using unbundled loops are not resolved,  
13 the Department should find that carriers are not likely to continue providing  
14 service to local customers via unbundled loops. It is not just the current UNE-P-  
15 based providers who will be affected by a premature forced move to unbundled  
16 loops – it is also the current UNE-L-based providers who will now have to share  
17 Verizon's resources as the numbers of orders manually handled by Verizon will  
18 grow astronomically.

19 MCI's own experience in Massachusetts is a good indicator of the inability  
20 to serve residential customers in Massachusetts through an unbundled loop  
21 strategy, even though a company may have its own switch and may be ordering a

1 limited number of unbundled loops. MCI is not actively serving the residential  
2 market in Massachusetts through its own switches, and therefore contrary to  
3 Verizon's testimony and exhibits, MCI should not be deemed a triggering  
4 company for unbundled local switching in Massachusetts.

5 As discussed in Ms. Lichtenberg's testimony, MCI's plan is to move  
6 toward serving its mass market customers in Massachusetts using its own  
7 switching, collocation and transport facilities, in combination with Verizon-  
8 provided unbundled loops. MCI intends to pursue this strategy in locations where  
9 certain operational and economic hurdles can be overcome. This strategy is  
10 critically dependent, however, upon reliable access to the customer's loop and the  
11 OSS, processes, procedures and other facilities needed to ensure that loops can be  
12 successfully extended to CLEC switching facilities and maintained on an on-  
13 going basis. That reliable access does not exist today, which is why MCI cannot  
14 and does not actively serve mass markets customers in Massachusetts through  
15 unbundled loops.

16 The Department must also carefully evaluate the other companies  
17 identified by Verizon as triggering companies for unbundled switching because,  
18 similar to MCI, they may not actually be actively serving the mass market via  
19 unbundled loops, and therefore should not be considered as trigger companies.

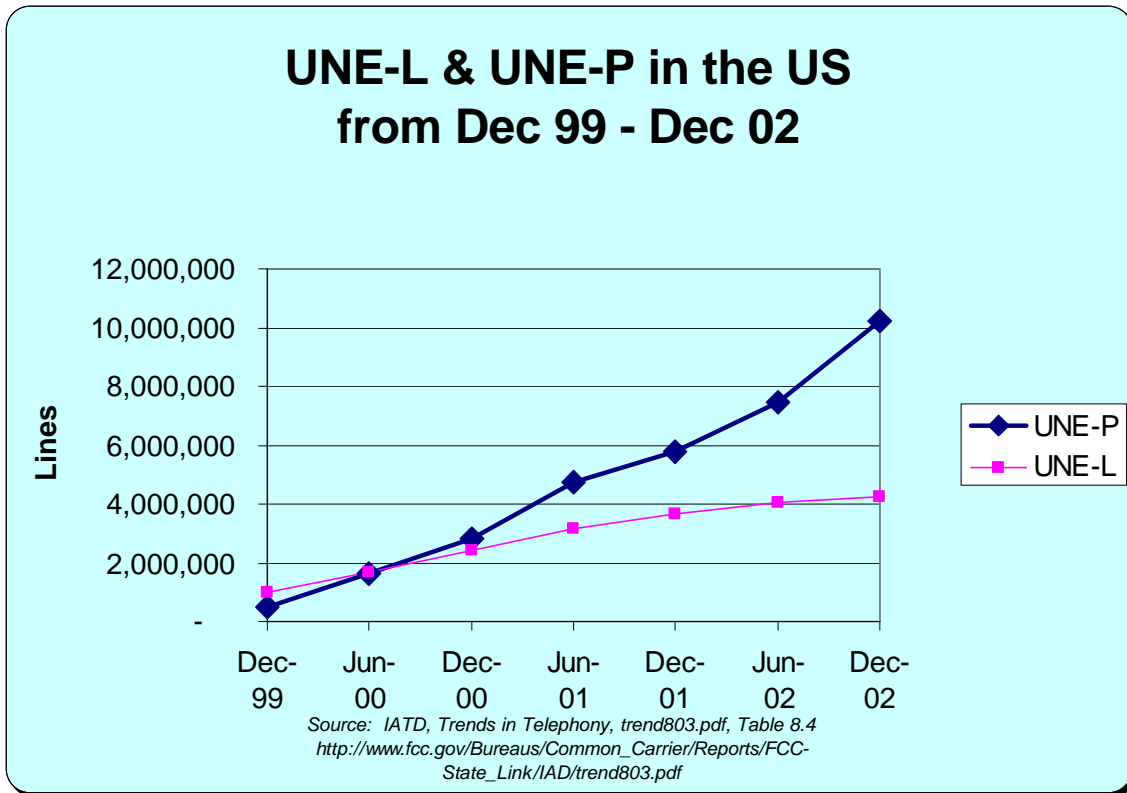
20 **Q. ARE THE ISSUES RELATED TO OPERATIONAL PROBLEMS WITH**  
21 **UNBUNDLED LOOPS ALLEVIATED WITH AN EFFECTIVE HOT CUT**  
22 **PROCESS?**  
23

1 A. No, they are not. While an improved hot cut process is critical to a workable  
2 UNE-L platform, there are numerous other operational issues that also exist that  
3 also give rise to the impairment that CLECs face today without access to UNE  
4 switching. The Department should recognize that moving from a UNE-P to a  
5 UNE-L strategy requires a true paradigm shift for both the CLEC and its  
6 underlying loop provider, Verizon. And, based upon the operational issues  
7 described in this testimony, as well as the customer impacting issues discussed in  
8 Ms. Lichtenberg's testimony, MCI is wholly uncomfortable sanctioning a  
9 migration of its sizeable UNE-P customer base to a UNE-L strategy in the near  
10 future. MCI simply has no confidence that were it required to rely upon Verizon  
11 for timely provisioning of high quality loop facilities, outside of a UNE-P  
12 arrangement, that its customers would continue to receive the quality of service  
13 that they have come to expect. Simply put, MCI sees no reasonable way in which  
14 it can, in the near term, migrate its thousands of Massachusetts UNE-P customers  
15 to a UNE-L delivery platform without massive service disruption, service  
16 impacting errors and a dramatic decrease in general customer service. Moreover,  
17 it is unlikely that it would be economic for MCI to do so. Further, to the extent  
18 that all of MCI's current UNE-P customers are required to migrate to UNE-L,  
19 much less all new customers that may be acquired, such volumes must be taken  
20 into consideration when determining whether other UNE-L-based companies will  
21 be able to continue providing service to their own mass markets customers given

1 the dramatic impact that will inevitably affect Verizon's ability to provision  
2 orders. Until the UNE-L process becomes as seamless as UNE-P, MCI, as well as  
3 other CLECs, remain operationally impaired without access to unbundled local  
4 switching as a means to access Verizon's local loops.

5 **Q. WILL THE PARADIGM SHIFT YOU DISCUSSED IN YOUR PREVIOUS**  
6 **ANSWER HAVE A MAJOR IMPACT ON COMPETITION**  
7 **NATIONALLY AND IN MASSACHUSETTS?**

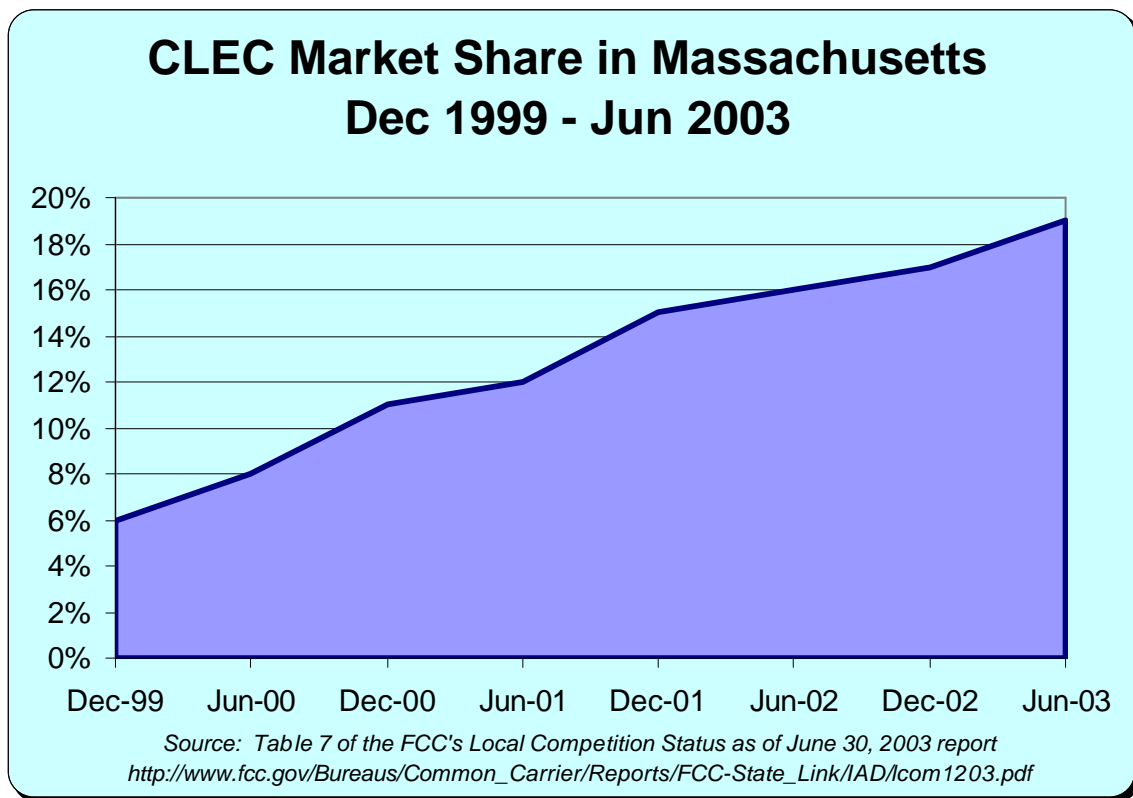
8  
9 A. It certainly has the potential to do so. The seamlessness and efficiency associated  
10 with UNE-P has, for the first time, made it possible for CLECs to enter the  
11 marketplace in a meaningful way, with UNE-P based market penetration  
12 outpacing UNE-L based market penetration by about 2.5 to 1 on a national basis,  
13 as depicted below.



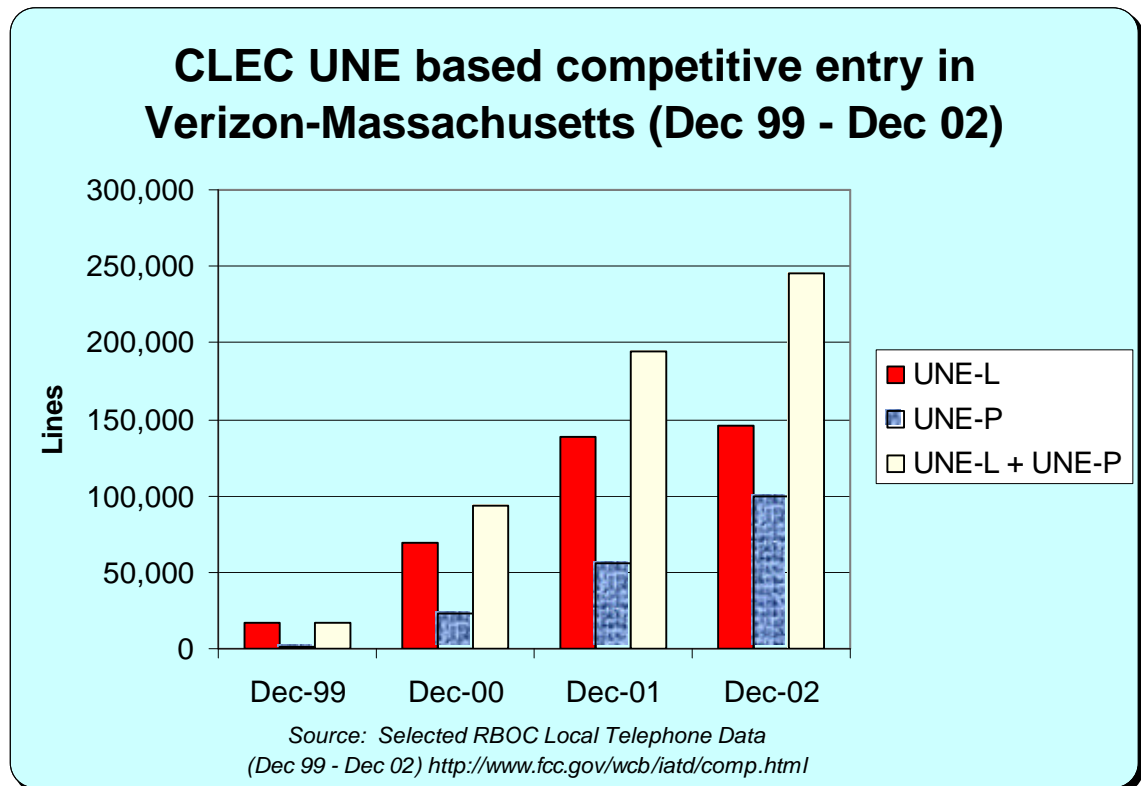
In order for this type of entry to remain sustainable, and for customers to enjoy the resulting economic benefits, the ease by which CLECs can participate in the market via UNE-P must be replicated via the UNE-L strategy. That is, “loop portability” must become an operational and economic reality. If that benchmark is not attained, the competitive market, and more importantly, consumers will suffer. Indeed, CLEC market share would likely take a significant step backward and the benefits attributable to CLEC entry would likely diminish accordingly.

**Q. HAS THE SEAMLESSNESS AND EFFICIENCY OF UNE-P HAD AN IMPACT ON COMPETITION IN THE LOCAL EXCHANGE MARKET IN MASSACHUSETTS IN MUCH THE SAME MANNER AS IT HAS NATIONALLY?**

1 A. It certainly has. In fact, as the charts included below demonstrate, CLEC  
2 penetration rates for Massachusetts have more than tripled and UNE-P growth has  
3 comprised nearly all of Verizon's competitive losses. Indeed, the CLEC  
4 penetration rate in Massachusetts, as depicted in the chart below, has increased to  
5 19% over the past three and one-half years, according to FCC data.



Moreover, the chart below demonstrates that recent growth results directly from UNE-P and its success in overcoming the operational (and economic) barriers that had restrained growth from resale and UNE-L alternatives previously.<sup>6</sup>



**Q. ARE THERE IMPORTANT AREAS OF CONCERN UPON WHICH THE DEPARTMENT SHOULD FOCUS IN EVALUATING THE CHALLENGES THAT EXIST WITH A UNE-L DELIVERY STRATEGY, AND THE ABILITY OF CARRIERS TO ACTIVELY SERVE THE MARKET?**

<sup>6</sup> The magnitude of the growth can be seen clearly when comparing UNE-L to UNE-P lines provisioned from December 2002 through November 2003. See attachment to response to JP-VZ-1-1 a, b, f, g.



1 A. Yes, there are. For purposes of clarity, I have identified three broad areas of  
2 concern the Department should consider when evaluating the operational and  
3 technical impairment that exists for carriers attempting to utilize UNE-L in order  
4 to serve mass market customers:

5  
6  
7 (1) Loop Provisioning Issues:  
8

9 While the FCC in its *TRO* focused primarily on “hot cuts” and the  
10 impairment resulting from the inability of CLECs to reliably,  
11 seamlessly and economically cut loops in large numbers (i.e., in a  
12 “batch”), this is but one of the provisioning issues giving rise to  
13 impairment without UNE switching. Issues related to untested  
14 provisioning processes operating at dramatically increased volumes  
15 on a day-to-day basis (not only for “batch” cuts but for future  
16 provisioning requirements), the increased reliability issues  
17 associated with substantial manual intervention in the provisioning  
18 process when compared to UNE-P which is largely automated, and  
19 the need to manage multiple provisioning scenarios (i.e., CLEC-to-  
20 CLEC, UNE-L to Line Splitting, etc.) are also worth noting.  
21 Solutions to all of these issues must be in place (and tested for  
22 proper performance) before UNE-L can be said to exist as a viable  
23 mass market delivery platform.  
24

25 (2) Loop Facilities:  
26

27 ILECs have argued for years that end user loops served via  
28 Integrated Digital Loop Carrier (“IDLC”) technology cannot be  
29 unbundled and provided to CLECs for UNE-L provisioning,  
30 because those loops are permanently combined (i.e., “integrated”)  
31 with their local switching facilities. Instead of admitting that IDLC  
32 can technically be unbundled and thereafter working to address the  
33 remaining operational aspects of any necessary solutions, they  
34 insist “work-arounds” must be implemented before a customer  
35 served via IDLC can be reached by a competitor. These  
36 workarounds are often time consuming, costly and fraught with  
37 technological deficiencies. To further exacerbate this problem,

1 ILECs appear to be employing IDLC technology with increasing  
2 frequency. For example, it has been our experience that IDLC is  
3 used to serve as many as 40% to 60% of the end users in some  
4 central offices.<sup>7</sup>

5  
6 Because of these technological challenges associated with  
7 unbundling IDLC loops, ILECs have consistently suggested that  
8 UNE-L requests for loops served via IDLC must “fall out” of any  
9 provisioning process (including “batch” hot cuts) and must be  
10 provisioned via an extremely expensive and time-consuming  
11 manual process. These issues must be addressed and resolved in  
12 determining whether a carrier is actively providing service to  
13 customers throughout a particular market, and in determining the  
14 proper definition of the market.

15  
16 It is worth noting that these issues do not arise in a UNE-P  
17 environment. Because IDLC loops are integrated with the ILEC’s  
18 switch and UNE-P uses both the loop and switch facility, this  
19 connection between the two need not be broken to provide a  
20 working circuit in a UNE-P environment. For this reason, the  
21 myriad issues that arise with respect to unbundling IDLC are  
22 unique to a UNE-L strategy and, clearly, these issues must be  
23 addressed and resolved before it can be decided that carriers  
24 providing service via UNE-L are able to actively provide service to  
25 mass market customers throughout the entire market.

26  
27 Moreover, there are specific concerns regarding the ability of  
28 CLECs who employ UNE-L to provision xDSL services or dial-up  
29 services at comparable levels of quality as Verizon is able to  
30 provide. As such, the CLEC’s ability to offer “bundled” packages  
31 of services (which are increasingly demanded by customers) is  
32 threatened.

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<sup>7</sup> Massachusetts wire center specific data relative to IDLC deployment and total working line information was not provided in electronic spreadsheet form, making it difficult to analyze. Verizon’s response to JP-VZ-1-4 states that the grand total of (Retail+Resale+UNEP) lines in Massachusetts is **\*\*\*BEGIN VERIZON PROPRIETARY \*\*\*\*\* END VERIZON PROPRIETARY\*\*\***. Verizon’s response to JP-VZ-1-9 states that there are **\*\*\*BEGIN VERIZON PROPRIETARY \*\*\*\*\* END VERIZON PROPRIETARY\*\*\*** lines served via IDLC. This equates to a statewide IDLC deployment rate of **\*\*\*BEGIN VERIZON PROPRIETARY \*\*\*\*\* END VERIZON PROPRIETARY\*\*\*** lines served via IDLC. Yet, the same data also shows that deployment in certain central offices is significantly higher. For example, **\*\*\*BEGIN VERIZON PROPRIETARY \*\*\*\*\* END VERIZON PROPRIETARY\*\*\*** of the lines in Brimfield are served via IDLC. Further analysis would undoubtedly reveal similar situations.

(3) Collocation/Transport Complexities

A workable UNE-L architecture requires the CLEC to procure and place numerous telecommunications assets for purposes of aggregating and transporting UNE loops from the ILEC's central office to its own switching facility. Many of these facilities can be purchased and managed by the CLEC itself (i.e., loop aggregation equipment), while others are likely to be purchased from the ILEC and managed consistent with interconnection agreements and tariffs (e.g., collocation, transport and EEL capacity). The Department should consider that both of these types of facilities are unique to a UNE-L architecture and are not required either by the ILEC in serving its own retail customers, or by a CLEC relying upon UNE-P. As such, the operational processes and resulting costs of procuring, placing and managing these facilities are over-and-beyond those costs incurred by the ILEC or by a CLEC using UNE-P. This is important to understand because the additional complexity associated with procuring and managing these facilities is not only important from a perspective of operational impairment (in some circumstances), but must also be considered for purposes of economic impairment.

Additionally, the availability and extent to which such services are currently deployed in relationship to the mass market must be contemplated when addressing impairment from an operational standpoint, particularly if ILEC policies, procedures and abilities are limiting factors.

**II. HOT CUT PROCESSES AND TRIGGERS**

**Q. HOW DO HOT CUT ISSUES RELATE TO THE TRIGGERS?**

A. As discussed above, the Department must evaluate whether a company identified as a trigger for unbundled switching is actively serving the mass market and whether it is likely to continue actively serving that market. First, the Department must look at the data regarding how many customers a carrier is actually serving in a defined market. Remember that the entire point of the triggers analysis is that if a company is a trigger, then there is an assumption that the company was able to overcome the impairment issues and barriers to entry that are associated with an unbundled loop strategy. If a company is only serving a small number of local customers in a market, and is not serving any residential customers at all in that market, then it is improper to assume that the company has overcome the barriers to entry associated with hot cuts. As discussed further in this testimony, because hot cuts are a highly manual process, it may be possible for Verizon to handle smaller volumes, but not handle the large volumes that would come from multiple carriers placing numerous orders in a given market.

Second, the Department must look at whether UNE-L-based providers will be able to continue actively serving the market if every single competitor is forced to use unbundled loops. As discussed above, UNE-P is the primary entry vehicle and has led to competitive growth in Massachusetts. All of those competitors, if

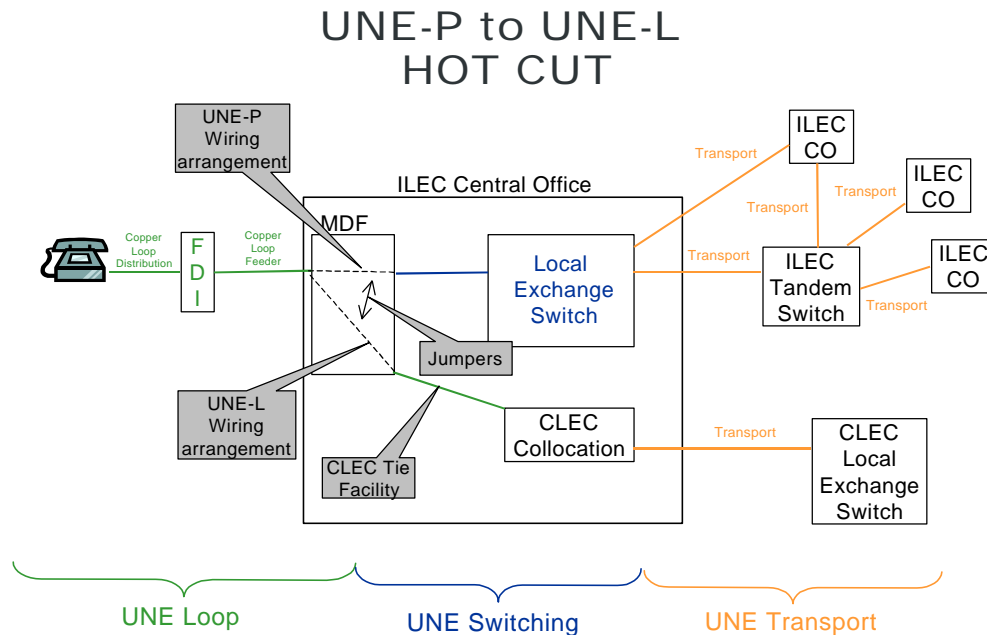
1 they want to stay in the market, will have to change their service delivery methods  
2 and become UNE-L-based providers. In addition, the current UNE-L-based  
3 providers will no longer be the only carriers using Verizon's manual labor  
4 resources, and will be affected by the substantial increase in UNE-L orders that  
5 Verizon would have to handle. Thus, the Department must evaluate what that  
6 means for the market and whether the trigger companies will in fact be able to  
7 continue serving customers if all other competitive carriers in Massachusetts  
8 begin serving customers via UNE-L.

9 **Q. WHAT IS A HOT CUT AND WHY IS IT SO DIFFICULT TO DO IN**  
10 **MASS VOLUMES?**

11  
12 **A.** The term "hot cut" describes the near-simultaneous disconnection of a working  
13 loop from a port on one carrier's switch and the reconnection of that loop to a port  
14 on a different carrier's switch, without any significant out-of-service period. A  
15 hot cut must also include some type of notification made to the appropriate  
16 number administrator informing the administrator that the customer's telephone  
17 number is now assigned to a different carrier, thereby allowing the customer to  
18 receive incoming calls at his/her existing telephone number. Generally, in a hot-  
19 cut scenario, regardless of whose switch the customer is moving from, and to, the  
20 ILEC must perform two manual wiring activities at the main distributing frame  
21 ("MDF"); (1) pre-wiring and (2) the actual loop cutover.

22 During the pre-wiring stage, the technician places a jumper between the  
23 CLEC tie facility connecting the CLEC's collocation cage to the ILEC central

1 office, and the customer loop. The jumper is terminated at the tie facility but not  
2 at the loop side. When the cut is scheduled to begin, the jumper (cross-wire) that  
3 is connected to the loop side of the existing loop/port (UNE-P) arrangement is  
4 disconnected and the jumper connected to the receiving CLEC's tie facility is  
5 terminated in its place. This completes a circuit between the CLEC facility in its  
6 collocation cage and the customers loop, thereby accomplishing the cut. Local  
7 Number Portability ("LNP") translation activities are typically involved with this  
8 type of transaction and have traditionally been the responsibility of the receiving  
9 carrier. The diagram below provides a high level depiction of the process  
10 described above.  
11



**Q. WHAT IS A BATCH HOT CUT PROCESS?**

A. The batch hot cut process would be a new process to be implemented in Massachusetts. MCI uses the term *Transition Batch Hot Cut Process* to address the FCC's requirements that a "seamless, low-cost batch cut process for switching mass market customers from one carrier to another" be approved, which, when implemented, will allow CLECs an opportunity to compete effectively in the mass market. (*TRO*, at par. 487). This process should be implemented in order to effectuate a transition of customers off of UNE-P and onto UNE-L in large

1 quantities, or “batches.” A variant of this process should also transcend  
2 migrations *en masse* in order for CLECs to be able to effectively compete for  
3 mass market customers on an ongoing, day-to-day basis. This daily process is  
4 referred to as a ***Mass Market Hot Cut Process***. To the extent that ILECs are  
5 unable to implement *Transition Batch Hot Cut Processes*, the initial mass  
6 transitioning of customers from UNE-P to UNE-L will not be manageable.  
7 Moreover, if an effective, permanent process is not established, current UNE-L-  
8 based providers will be hampered in their ability to continue providing service  
9 while Verizon attempts to handle the massive amount of orders that will come  
10 from all CLECs.

11 The Department has established a separate track for hot cuts, where it is  
12 MCI’s hope that the Department will actively pursue and require the  
13 implementation of a seamless and efficient hot cut process for both transitioning  
14 existing customers and handling new customer orders. Prior to determining that a  
15 carrier is able to continue serving mass markets customers via unbundled loops,  
16 the Department should ensure that hot cut processes are not only “identified” and  
17 “documented,” but that they are actually tested and implemented.

18  
19 **Q. IS THE DEPARTMENT SOMEHOW CONFINED TO AN**  
20 **EXAMINATION OF HOT CUT PROCESSES WITHIN THE CONTEXT**  
21 **OF “TRIGGER ANALYSES” OR LIMITED TO ANALYSIS OF “BATCH”**  
22 **PROCESSES THAT ARE DESIGNED TO ADDRESS THE BATCH**  
23 **MIGRATION DESCRIBED ABOVE?**  
24



1 A. No. The Department is not restricted in either sense. As described above, state  
2 commissions must approve hot cut processes independent of trigger analyses.  
3 Moreover, the FCC found that carriers are impaired without access to unbundled  
4 local switching when attempting to address mass market customers due, in part, to  
5 inadequate hot cut processes. In directing the state commissions to examine  
6 issues of impairment more generally, the FCC indicated that state commissions  
7 should perform more granular analyses to determine whether a finding of “no  
8 impairment” should be granted and, in doing so, directed the commissions to  
9 examine other factors which include, in part, “difficulties in performing customer  
10 migrations between competitive LECs.” (*TRO*, ¶ 424 at fn 1298). Such  
11 difficulties may well arise outside of the “batch” concept discussed above and will  
12 likely lead to impairment absent some intervention by the Department. Hence, the  
13 Department should view its responsibility relative to hot cuts as twofold: (1) The  
14 Department must, within 9 months, approve a *Transition Batch Hot Cut* process  
15 that would, given a finding of non-impairment, allow carriers to migrate  
16 customers *en masse* from UNE-P to UNE-L; and (2) the Department should also  
17 evaluate the extent to which, on a going forward, day-to-day basis, carriers would  
18 still be impaired unless a seamless, efficient and low cost *Mass Market Hot Cut*  
19 process was also in place. Without the successful implementation of both  
20 processes, the type of loop portability needed to make UNE-L a suitable  
21 replacement for UNE-P cannot become an operational and economic reality.

Moreover, the extent to which UNE-L is viable for the mass market will be dependent, at least in part, on the costs incurred during the hot cut process, and the Department must also look at such cost issues when evaluating hot cut processes.

**Q. HAVE YOU HAD AN OPPORTUNITY TO REVIEW THE EXISTING HOT CUT PROCESSES USED BY VERIZON?**

A. To some degree, given that the processes are the same in all jurisdictions. Nonetheless, as discussed in Ms. Lichtenberg's testimony, MCI believes the existing processes are inadequate and would not effectively measure-up to the FCC's requirements. In fact, Ms. Lichtenberg identifies many customer impacting, operational issues that involve the exchange of information that must take place in a UNE-L migration that make the current processes unworkable for the mass market in particular. MCI has serious concerns regarding the extent to which ILECs will be successful in designing, testing and implementing *Transitional Batch Hot Cut* processes that will be capable of seamlessly transferring customers' loops from one carrier's switch to another carrier's switch, which I refer to as "loop portability", on an economic basis. Likewise, MCI is concerned about the extent to which ILECs will successfully implement a *Mass Market Migration Hot Cut* process that will be necessary to address the increasing daily migration and churn-related volumes that will no doubt exist in a dynamic competitive market where UNE-L is used to serve the mass market.

**Q. GENERALLY SPEAKING, WHAT ARE SOME OF THE MAIN ISSUES THE DEPARTMENT SHOULD CONTEMPLATE WHEN**

**DETERMINING WHETHER THE HOT CUT PROCESS WILL IMPEDE  
A CARRIER'S ABILITY TO ACTIVELY SERVE THE MARKET, AND  
CONTINUE SERVING THE MARKET IF THE TRIGGERS ARE MET?**

A. In addition to the numerous issues described in Ms. Lichtenberg's testimony,  
MCI's concerns regarding the ILEC hot cut process can generally be categorized  
as follows: (1) workability; (2) availability; and (3) scalability.

**Q. PLEASE PROVIDE ADDITIONAL DETAIL REGARDING EACH OF  
MCI'S CONCERNS.**

A. Given that in markets where MCI chooses to serve its substantial mass market  
customer base via UNE-L, a hot cut will be required for each new customer it  
wins, in addition to the migration of existing UNE-P customers to UNE-L *en*  
*masse*, the capabilities of the ILECs' systems and processes to accommodate this  
substantially increased volume of hot cuts in a timely manner without customer  
service interruption is paramount. Using existing ILEC processes, manual  
intervention will be required for each loop cutover. In other words, an ILEC  
technician will need to be dispatched to accommodate the frame manipulation for  
every single loop that must be transitioned from one carrier to another. According  
to the most recent FCC data, as of year end 2002 there are well over 100,000  
UNE-P lines in service in Massachusetts. This is a substantial number of UNE-P  
customers that would have to be transitioned to UNE-L – not to mention the on-  
going new orders that would have to be processed. Concerns regarding Verizon's  
ability to handle thousands of these types of manual orders on an ongoing basis

1 are legitimate. This is especially troubling given that Verizon has not had to  
2 provide a substantial amount of hot cuts in a short period of time for a large  
3 number of carriers, especially for carriers that serve residential customers.  
4

5 **Q. PLEASE EXPLAIN YOUR CONCERNS RELATIVE TO**  
6 **“WORKABILITY.”**  
7

8 A. A hot cut is, by definition, a coordinated effort on the part of Verizon and the  
9 CLEC to “cut” a loop with minimal disconnection time (i.e., the time wherein the  
10 customer is connected to no switch or is connected to a switch wherein his/her  
11 telephone number is no longer active). For this reason, the Verizon hot cut  
12 process must be specifically designed to minimize not only the time and cost  
13 specific to Verizon’s activities, but also those associated with the CLEC (both  
14 CLEC representatives and CLEC systems). In short, the Verizon process must  
15 work well not only for Verizon, but for the CLEC as well.

16 **Q. PLEASE EXPLAIN YOUR CONCERNS ABOUT “AVAILABILITY.”**

17 A. Verizon intends to limit its batch hot cut process such that: (1) CLEC-to-CLEC,  
18 UNE-L based migrations would not be available via the batch hot cut process; (2)  
19 lines currently involved in a “line splitting” arrangement could not be cut via the  
20 hot cut process; (3) hot cuts for loops served via IDLC will require special  
21 engineering and potentially extended provisioning timeframes; (4) lines to be  
22 provisioned over Enhanced Extended Links (“EELs”) would not be available; and  
23 (5) long holding periods would, in most circumstances, replace negotiated and

1 normal provisioning intervals. All of these restrictions, and others, substantially  
2 reduce the benefit provided by the hot cut process and could severely limit the  
3 efficiency by which CLECs could offer mass market services on a UNE-L basis.  
4 In short, hot cut processes with these types of restrictions would severely harm a  
5 carrier's ability to continue providing service via unbundled loops and would do  
6 very little to help overcome the FCC's national finding of impairment.

7 **Q. HAVE ILECS MADE STATEMENTS TO THE EFFECT THAT THESE**  
8 **HOT CUT MIGRATIONS WILL NOT POSE ANY PROBLEMS?**

9  
10 A. Yes. Though ILECs claim that they can handle large volumes of hot cuts if the  
11 triggers are met, the facts simply do not support their bravado. In Massachusetts,  
12 even based upon its own calculations, Verizon anticipates the need to hire and  
13 train \*\*\* BEGIN PROPRIETARY \*\*\* END PROPRIETARY \*\*\*new  
14 employees just to accommodate the increased volume of hot cut demands.<sup>8</sup> In  
15 addition, given the fact that the new hot cut processes will be largely untested and  
16 untried, and in many circumstances, be performed by new employees with limited  
17 training and experience, there can be no assurance these processes will meet even  
18 today's hot cut standards, let alone standards comparable to the relatively  
19 seamless UNE-P provisioning standard which has fueled the level of competition  
20 that exists for mass market customers today.

21 **Q. PLEASE EXPLAIN IN MORE DETAIL.**

---

<sup>8</sup> See Exhibit IV-A Force Load Model ("FLM") associated with Verizon Panel Testimony, filed November 14, 2003.

1 A. The information I have seen to date, taken from Verizon's interval guide, clearly  
2 states that only basic individual coordinated hot cuts consisting of 20 lines or less  
3 are given standard completion intervals.<sup>9</sup> Bulk hot cut project completion due  
4 dates are normally negotiated, which allows Verizon to spread its work load to  
5 meet the throughput restraints of the underlying process. The manual requirements  
6 of the process dictate the need to match the appropriate number of technicians and  
7 other personnel with the volume of work that is requested and, as such, it is the  
8 manned workforce that provides the restraining factor in upward scalability. As  
9 volumes increase, a workload strain is placed on the existing work force,  
10 eventually leading to transfers from other jobs within the ILEC or through new  
11 hires, in order to meet demand. Unfortunately, simply "throwing more bodies" at  
12 the problem is only helpful to a limited degree, as real-world constraints on the  
13 number of technicians that can work on a given frame at a given time come into  
14 play. To the extent Verizon's process cannot keep up with the dramatically  
15 increased demand for hot cuts, the compounding effect of missed cut dates would  
16 create long UNE-L provisioning intervals and an enormous backlog of hot cut  
17 requests.

18 **Q. WHAT IS THE MAJOR OBSTACLE TO A SCALABLE HOT CUT**  
19 **PROCESS ON THE PART OF THE ILECs?**  
20

---

<sup>9</sup> Hot cut intervals are published at [www22.verizon.com/wholesale/attachments/une\\_intervals.xls](http://www22.verizon.com/wholesale/attachments/une_intervals.xls)

1       A.     The major bottleneck in the hot cut processes advocated by the ILECs exists at the  
2             Main Distribution Frame (“MDF”). As described before, from an operational  
3             standpoint, in a UNE-L environment, each customer’s line must be rewired  
4             manually for purposes of connecting the UNE loop to the receiving CLEC’s  
5             collocation cage or EEL arrangement. This raises another important factor  
6             specific to scalability, i.e., differences between large hot cut jobs undertaken today  
7             (or in the past) by the ILECs, versus the very different hot cut requirements they  
8             will face in a market without UNE-P. Currently, large project hot cuts typically  
9             involve one or a limited number of individual multi-line business customers  
10            wherein the cut, though potentially impacting many loops, is specific to a given  
11            customer. Frequently, the loop MDF connections for these groups of multiple  
12            lines are centrally located on the frame and typically, all of the customers’ loops  
13            are relatively concentrated geographically on the frame, because they terminate at  
14            the same premises. Conversely, a hot cut for a large group of residential, single  
15            line customers will generally appear at random frame locations. It is easy to  
16            envision multiple frame technicians working on a number of individual large  
17            business hot cuts concentrated on a given loop count; however, it is equally as  
18            easy to envision the potentially chaotic situation that could develop as a result of  
19            multiple technicians working simultaneously on a number of large residential  
20            single line hot cut projects involving loops appearing in random locations on the  
21            frame.

1           That is one of the reasons it is so important to exclude companies that do  
2 not provide service to residential customers via UNE-L as trigger companies.  
3 Although MCI has ordered and processed some unbundled loops in  
4 Massachusetts, none of those are for residential customers due in part to the  
5 problems with hot cuts. When MCI does order unbundled loops for business  
6 customers, MCI has a dedicated team to handle the account because of the  
7 problems with the hot cut process, and MCI is required to have an open bridge  
8 with Verizon to deal with any problems that may be encountered. This process is  
9 simply not transferable to thousands of residential customers. The Department  
10 must evaluate whether the same is true for all trigger companies identified by  
11 Verizon, and if so, whether such companies are likely to continue providing local  
12 service to customers if Verizon's resources are even further strained with all  
13 competitive carriers ordering unbundled loops.

14       **Q. ARE PROBLEMS ASSOCIATED WITH HOT CUTS EXACERBATED**  
15       **WHEN THE MIGRATION IS FROM ONE CLEC TO ANOTHER?**

16  
17       A. Yes. The potential for increased complication for CLEC-to-CLEC cuts certainly  
18 exists. The amount of coordination, the information required and a number of  
19 other complicating factors are magnified with the introduction of CLEC-to-CLEC  
20 hot cuts as well as with myriad other scenarios (e.g., hot cut from a line sharing  
21 CLEC to a CLEC handling both the broadband and narrowband application,  
22 moves from one CLEC to another wherein the receiving CLEC is serving via the  
23 ILEC's resale services and many others). In many of these scenarios, three or



1 more individual carriers as well as providers of ancillary services such as NPAC<sup>10</sup>,  
2 are required to cooperate, in real time, for purposes of accommodating this largely  
3 manual process. A failure at any one of the numerous steps can result in a  
4 customer losing service.

5 **Q. HOW IS THE ISSUE OF CLEC-TO-CLEC HOT CUTS RELEVANT TO**  
6 **THE TRIGGERS ANALYSIS?**

7  
8 **A.** Many of the CLECs that are listed as triggering companies have not had to operate  
9 in a world where they can only obtain customers from other CLECs via unbundled  
10 loops. Thus, many of the procedures that must be implemented in order to  
11 seamlessly switch customers from one CLEC's unbundled loop to another  
12 CLEC's unbundled loop simply do not exist. Thus, it is highly questionable and  
13 in fact doubtful that CLECs would be able to continue functioning normally and  
14 continue to actively serve the market when these procedures are not in place.

15 **Q. TO THE EXTENT UNE-L BECOMES MORE WIDELY IMPLEMENTED,**  
16 **WILL CHURN IMPACT THE ILEC'S ABILITY TO KEEPUP WITH THE**  
17 **DEMAND FOR HOT CUTS?**

18  
19 **A.** Absolutely. As Ms. Lichtenberg describes in more depth, churn is increasingly  
20 important and will ultimately drive the rate at which UNE-L migrations grow.  
21 Moreover, this Department should not ignore CLEC- to- CLEC UNE-L  
22 migrations. In fact, the FCC specifically cited such migrations as a potential area  
23 of impairment. (See, e.g., TRO, at paragraph 476.) Based upon Verizon's  
24 positions stated at various state batch hot cut collaboratives, Verizon does not

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<sup>10</sup> Number portability administration center.

1 intend to support CLEC-to-CLEC migrations within their new batch hot cut  
2 process. As such, once a customer is served by a CLEC on UNE-L facilities, the  
3 ability of that particular customer to move to another carrier (other than Verizon)  
4 in the future without significant service-impacting problems is in doubt. All of  
5 the issues which lead to the FCC's finding of impairment without unbundled  
6 local switching come into play in such a situation and are compounded by the fact  
7 that a third carrier is now involved.

8 **Q. DO THE ISSUES BRIEFLY OUTLINED ABOVE ADDRESS ALL**  
9 **ATTRIBUTES BY WHICH THE ILEC HOT CUT PROCESSES SHOULD**  
10 **BE EVALUATED?**

11  
12 A. No, they do not. Ms. Lichtenberg addresses a number of additional issues in her  
13 testimony. Likewise, the Department has established a separate hot cut track of  
14 this proceeding and MCI intends to participate in that part of the proceeding, in  
15 which MCI will present its position on Verizon's proposed procedures and MCI's  
16 proposed procedures for handling unbundled loops.

17 **III. UNBUNDLING OF LOOPS SERVED BY INTEGRATED DIGITAL**  
18 **LOOP CARRIERS, IMPAIRMENT AND TRIGGERS**

19  
20 **Q. IN THE SECTION ABOVE, YOU DISCUSSED DIFFICULTIES**  
21 **ASSOCIATED WITH OBTAINING ACCESS TO LOOPS VIA THE HOT**  
22 **CUT PROCESS. ARE THERE OTHER LOOP-RELATED ISSUES THAT**  
23 **ALSO GIVE RISE TO IMPAIRMENT?**

24  
25 A. Yes. In an environment wherein CLECs must rely upon a UNE-L delivery  
26 strategy to serve the mass market, the physical process of accessing the unbundled

1 loop, and thereafter using that loop to provide a comparable service to its  
2 customer, is likely to be the most important and difficult obstacle to overcome. In  
3 the following section, I identify a number of operational obstacles that plague the  
4 existing UNE-L delivery strategy, and lead to increased operational complexities,  
5 diminished quality, and increased costs when compared to the existing retail  
6 and/or UNE-P arrangements. Clearly, these issues give rise to impairment.

7 **Q. CAN YOU BRIEFLY SUMMARIZE THESE OPERATIONAL**  
8 **CONCERNS?**

9  
10 A. The operational concerns that I raise affect the trigger analysis in much the same  
11 way as the hot cuts. To the extent that the issues are not resolved before forcing  
12 the entire industry to an unbundled loop strategy, the ability of carriers to actively  
13 serve the market on a going forward basis will be severely affected. In addition,  
14 the problems I raise below are directly related to the proper definition of the  
15 market, as more fully discussed in the testimony of Mr. Pelcovits.

16 The majority of the operational issues I describe below result directly from  
17 the fact that in a UNE-L environment, Verizon will be separating network  
18 elements that it had specifically combined in order to provide its own retail  
19 service in as efficient a manner as possible (and currently maintains in a combined  
20 fashion to provide UNE-P). The intentional separation of a combined loop and  
21 port combination required by any UNE delivery strategy other than UNE-P  
22 generates at least the following two types of problems:

(1) Verizon insists that its integrated DLC facilities (IDLC) cannot be unbundled at the DS-0 (individual line) level. This means that when a CLEC orders a loop which is served via IDLC, there are two possibilities: either Verizon will refuse to provide it because there are no alternate facilities available, or Verizon will move the CLEC line to an alternate facility. This is true even though that same customer as a Verizon retail end user, or even as an MCI customer served via UNE-P, may have been using the facility currently supporting his/her service for years. Worse yet, in many circumstances the facility to which the customer is re-assigned is technologically inferior to the existing facility, or may simply be a facility that has been poorly maintained. Further, even the presumably simple process of reassigning a new facility is anything but simple, and can cause numerous service-impacting problems for the customer (problems the customer will undoubtedly identify with switching service providers) that would be avoided absent the need to “un-combine” the existing facilities used for retail/UNE-P.

(2) As greater and greater numbers of competitors are moved from more efficient fiber-based services to copper-based services via the reassignment process described above, this Department will undoubtedly begin to see two networks develop, each exhibiting dramatically different levels of quality: i.e., the network used by the ILEC to serve its retail customers, and the network leased to CLECs by the ILEC for purposes of competing against it. As CLECs in this environment compete for limited numbers of inferior quality facilities (as the ILEC begins to retire its copper plant), situations of “no facilities” or facilities that will require costly repair before they can be used will undoubtedly become more prominent for the CLEC, thereby increasing the amount of time required to service any single customer, and dramatically increasing the CLEC’s customer acquisition costs.

These problems specifically impact the ability of carriers to actively serve the local mass market using unbundled loops.

**Q. PLEASE DESCRIBE IN MORE DETAIL THE TWO PRIMARY ISSUES YOU SUMMARIZE ABOVE.**

A. Before the Department can fully appreciate the operational barriers I have summarized above, a brief overview of the existing outside plant network,

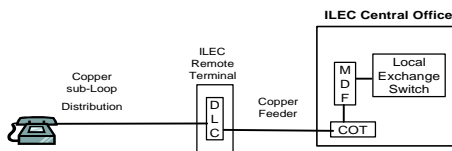
focusing on different types of loop architectures is in order. The diagrams below depict the three most common outside local loop serving arrangements.

(1) All-copper outside plant; no digital loop carrier (DLC)

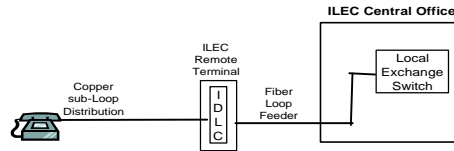


 Local Voice Network

(2) Copper loop plant with UDLC



(3) Copper & fiber loop plant with IDLC



central office where it is manually cross connected from the vertical side of the main distributing frame (generally considered the “outside plant” or OSP appearance) to the horizontal side of the frame (generally considered the “central office” or CO appearance).

The lower portion of the diagram shows two alternate serving arrangements that utilize more advanced “pair gain” platforms known as universal digital loop carrier (UDLC) on the left, and integrated digital loop carrier (IDLC) on the right. In a general sense, the purpose of both DLC applications is to aggregate the traffic of literally hundreds of individual customers and then multiplex those individual signals into a single, higher

1 bandwidth signal that can be transported more efficiently between the remote  
2 terminal ("RT") and the CO.

3 In the UDLC scenario, the copper loop leaves the customer connected to a  
4 DLC RT which is likely located in the customer's own neighborhood. The  
5 electronics in the DLC convert the analog signals to a digital multiplexed format,  
6 and then send the digital signal over a feeder cable (copper in this case) to the  
7 central office (CO).<sup>11</sup> The cable terminates in the CO on a Central Office  
8 Terminal (COT), which converts the signal back to an analog format, at a voice  
9 grade (individual line) level, ultimately terminating at the MDF for manual wiring  
10 purposes. The MDF wiring appearances serve as a point of interface for the  
11 carriers' switching equipment (and as a point of interconnection for a CLEC).

12 In the third example, the loop from the customer connects to a remote  
13 terminal equipped with IDLC technology. With this application, the electronics in  
14 the RT convert the analog signals to a digital multiplexed format, and then send  
15 the digital signal over fiber feeder cable to the CO, terminating directly in the  
16 ILECs' digital switch without converting the signal back to analog.<sup>12</sup>

17 **Q. CAN YOU EXPLAIN THE DIFFERENCE BETWEEN UDLC AND IDLC**  
18 **IN MORE DETAIL?**  
19

---

<sup>11</sup> Note that UDLC may utilize either fiber or copper feeder facilities.

<sup>12</sup> While certain fiber termination equipment actually exists between the RT and the switch, the point of the diagram is that equipment required to convert the signal from digital to analog (or any other format) is not required.

1 A. Older UDLC technology consists of an RT, a transmission (transport) facility to  
2 link the RT to the CO, and a COT. The RT aggregates the copper distribution  
3 pairs and performs conversions -- converting the customer's analog signal to a  
4 digital multiplexed format going to the central office, and (in the opposite  
5 direction) converting the digital signal from the central office to the customer to  
6 an analog signal. The transport carries the digital signal from the RT to the COT,  
7 and vice versa. The COT equipment converts the digital signal from the RT to an  
8 analog signal before the signal is terminated on the MDF and cross-connected to  
9 the switch port.

10 With the introduction of digital switches, an additional conversion was  
11 needed at the MDF. The signal that was converted from digital to analog at the  
12 COT had to be converted back to a digital signal by an Analog Interface Unit  
13 ("AIU") resident in the switch. The required digital-to-analog conversion at the  
14 CO was unnecessary, inefficient, and expensive, as more and more digital  
15 switches were deployed. IDLC addressed these inefficiencies by eliminating the  
16 need for the additional analog-to digital conversions at the CO. The analog signal  
17 originating at the customer's premises still is converted to digital at the RT, but no  
18 other analog/digital conversions are necessary as digital switches can accept the  
19 digitally formatted signal without conversion (something older analog switches  
20 could not do). Unlike traditional copper loops or UDLC lines, IDLC lines do not  
21 typically have termination appearances on the MDF.

1  
2 **Q. OTHER THAN THE LACK OF DIGITAL/ANALOG CONVERSION, ARE**  
3 **THERE OTHER ADVANTAGES SPECIFIC TO IDLC OVER UDLC?**  
4

5 A. The answer to that question is strongly influenced by whether you ask it relative to  
6 retail/bundled services, or if the question is specific to unbundled services, and  
7 therein lies the problem. With respect to bundled services (retail and/or UNE-P),  
8 there are undisputable advantages to IDLC. For bundled services, IDLC allows  
9 local loops to be connected to a digital circuit switch more efficiently and cost  
10 effectively when compared to UDLC, because IDLC requires neither an analog  
11 conversion at the CO, nor the AIU line card at the switch, nor manual MDF  
12 wiring. As a result, compared to today's IDLC technology, older UDLC systems  
13 require unnecessary investment for digital-to-analog and analog-to-digital  
14 conversion equipment and MDF wiring in the central office.

15 **Q. DO THESE ADVANTAGES ACCRUE TO CLECS UTILIZING UNE-L?**

16 A. Typically not. To the extent that IDLC has advantages over UDLC and ILECs  
17 continue to insist that they will not unbundle IDLC systems for use by their CLEC  
18 competitors, these advantages accrue only to retail and UNE-P services that rely  
19 upon the combined nature of the IDLC system. If UNE-P were eliminated as the  
20 result of a finding of non-impairment and if Verizon does not unbundle IDLC  
21 loops, only Verizon and its retail customers will enjoy the benefits of IDLC.  
22 CLECs would be left with no ability to serve customers, or relegated to serving  
23 customers via facilities that are inferior to those used by Verizon.



1       **Q.   EARLIER YOU MENTIONED THAT VERIZON MAY REPLACE AN**  
2       **IDLC LINE WITH EITHER A COPPER LOOP OR A UDLC LINE WHEN**  
3       **ASKED TO PROVIDE A UNE LOOP TO A CUSTOMER SERVED VIA**  
4       **IDLC. ARE THERE PROBLEMS ASSOCIATED WITH THIS**  
5       **APPROACH?**

6  
7       A.   Yes, there are several. First, converting the line from IDLC to UDLC takes time,  
8       requires the order generally to fall out of any flow-through process, requires a  
9       technician dispatch and is often expensive. As an example, in Massachusetts,  
10      Verizon has proposed a surcharge of \$105.13 per IDLC loop.<sup>13</sup>

11               Further, Section 12.13.3 of Telcordia *Notes on the Networks* (SR-2275,  
12      Issue 4, October 2000) which is entitled "Unbundling Issues Associated with  
13      UDLC and IDLC Systems" indicates that UDLC contributes to multiple problems  
14      including (a) increased dial tone delay, (b) degradation of on-hook transmission  
15      services, such as caller ID, (c) degradation of signal quality as a result of multiple  
16      A/D and D/A conversions and (d) reduction in analog modem operation speeds  
17      due to the number of A/D conversions.

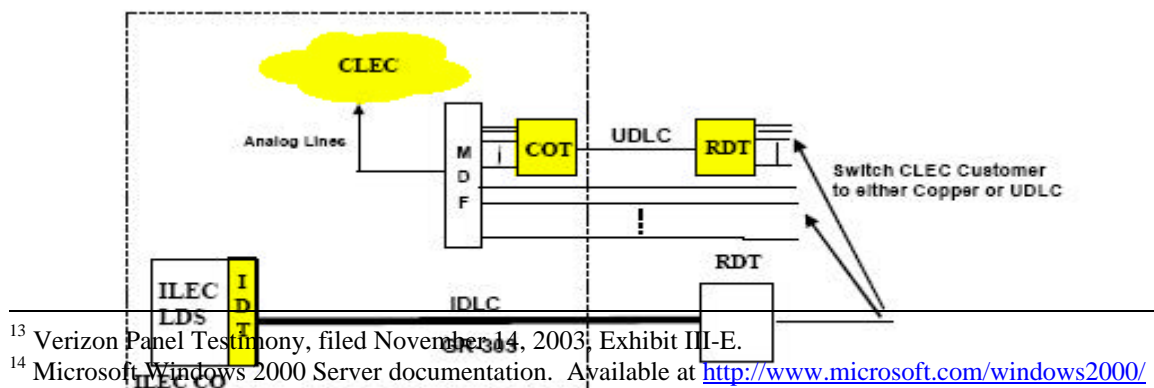
18      **Q.   CAN YOU EXPLAIN THE LAST ISSUE ABOVE– REDUCED MODEM**  
19      **SPEED – IN GREATER DETAIL?**

20  
21      A.   As described above, IDLC avoids additional analog-to-digital and digital-to-  
22      analog conversions inherent in the UDLC system. In doing so, the IDLC system  
23      avoids problems associated with dramatically reduced bit rate speeds for voice  
24      band data connections (e.g. dial-up Internet access and fax machines) that plague  
25      UDLC systems. This issue is described more fully at Microsoft's Windows 2000

support website, where Microsoft explains that: “there can be only one analog connection between your modem and the host computer” if a PC modem is to support a V.90 dial-up connection capable of operating at speeds of 56 kilobits per second.<sup>14</sup> Moreover, customers served by UDLC cannot receive ISDN and ADSL services without the installation of additional external loop electronics to increase digital transmission bandwidth at the UDLC. These limitations do not exist with most IDLC configurations. In short, UDLC systems can dramatically reduce the access speed enjoyed by dial-up Internet customers, while IDLC systems avoid these problems entirely.

**Q. ASSUMING THAT VERIZON MOVES A CLEC TO ALTERNATE FACILITIES, PLEASE EXPLAIN HOW A TRANSFER IS ACCOMPLISHED?**

A. The diagram below, taken from Telcordia’s *Notes on the Network*, Issue 4, section 12.13.2.1, provides an illustrative example of the two “work arounds” used by Verizon to provide a UNE loop to a CLEC to serve a customer that currently has an IDLC loop.



<sup>13</sup> Verizon Panel Testimony, filed November 14, 2003, Exhibit III-E.

<sup>14</sup> Microsoft Windows 2000 Server documentation. Available at <http://www.microsoft.com/windows2000/> (included with this testimony as Attachment #2)

Figure 12-33. IDLC Unbundling - Bypass the IDLC System

1  
2  
3  
4  
5 A field technician dispatch in this scenario (contrasted with only a frame dispatch  
6 for a normal hot cut) is required to the RT, in the outside plant (not only in the  
7 CO). As such, the time and resulting costs required to accomplish the transfer are  
8 notably increased, as is the chance for error (in many cases, assignment records  
9 for facilities at an RT or at an accompanying serving area interface – “SAI” – are  
10 less accurate than those for central office facilities).

11 **Q. UNDER THE COPPER SCENARIO DESCRIBED ABOVE, DO ILECS**  
12 **AND/OR CLECS NEED TO DISPATCH TECHNICIANS FOR LOOP**  
13 **INSTALLATIONS?**

14  
15 A. The technician dispatch is required in either a copper or UDLC transfer situation.  
16 ILEC technicians are involved with CO work in this scenario but in most cases  
17 technicians are also dispatched to the RT and even to the end-user premise in  
18 some instances in order to change facilities. In addition, in some situations  
19 CLECs must also visit the customer’s premises to change/validate wiring and test  
20 customer equipment. In comparison, a UNE-P environment involving an “as is”  
21 or “as ordered” migration does not typically require the ILEC or CLEC to dispatch  
22 technicians to the CO or field.

23 **Q. DO THESE WORK AROUNDS GIVE RISE TO IMPAIRMENT?**

1       A.     Absolutely. Clearly the CLEC faces both technical and provisioning  
2             disadvantages relative to either work around identified above. The process almost  
3             invariably entails additional provisioning time, additional costs and the result is  
4             often an inferior facility. Likewise, all of these difficulties and increased costs  
5             appear to the customer to be a direct result of choosing a competitor's service. It  
6             goes without saying that an ILEC customer who is currently being served by  
7             IDLC (a growing probability) is more likely to convert to a CLEC if the transition  
8             is quick and seamless, but not if the new service is technologically inferior and  
9             takes an extended period of time to provision.

10            Additionally, as the industry moves to an entire UNE-L world, the  
11            problems with providing loops where IDLC exists will be exacerbated. Although  
12            current UNE-L CLECs may be willing to work through the problems that occur  
13            with IDLC loops, those CLECs are operating at low volumes and are currently  
14            able to demand more of Verizon's time and resources. Once all CLECs are forced  
15            to provide service via unbundled loops only and Verizon's resources become  
16            more and more strained, the problems discussed above with regard to delayed  
17            provisioning will only get worse and CLECs may not be willing to subject their  
18            customers to this inferior treatment.

19       **Q.     HOW DOES THIS ISSUE OF IDLC LOOPS RELATE TO THE**  
20       **TRIGGERS ANALYSIS?**

21  
22       A.     To the extent that CLECs have either been refused IDLC loops all together, or are  
23             relegated to inferior services at these astronomical costs and highly manual, labor

1 intensive and time-consuming processes, and Verizon has to go through this  
2 process for all CLEC orders, CLECs will be unable to actively serve the market  
3 wherever IDLC loops exist.

4 **Q. WOULD THE COSTS YOUHAVE DESCRIBED ABOVE BE INCURRED**  
5 **IF CARRIERS WERE ALLOWED TO MAINTAIN ACCESS TO UNE-P?**

6  
7 A. No, they would not. Because UNE-P allows CLECs to use the actual IDLC  
8 facility in its integrated form, neither Verizon, nor the CLEC, would incur the  
9 hundreds of dollars in increased labor time required to accomplish one of the  
10 workarounds required to provide an alternate facility. Indeed, the costs associated  
11 with this type of hot cut transfer represent costs specific to UNE-L that neither  
12 carriers nor customers would have to incur where UNE-P remains available.

13 **Q. IF HOT CUTS COULD BE ACCOMPLISHED IN A RELATIVELY**  
14 **TIMELY AND LOW COST FASHION, WOULD THE ISSUES YOUHAVE**  
15 **DESCRIBED ABOVE, AND POTENTIALLY OTHERS, REMAIN?**

16  
17 A. Yes. The operational obstacles I have described above will exist regardless of  
18 how effective any hot cut process is today or eventually becomes. These  
19 operational difficulties that were largely mitigated by a UNE-P framework can  
20 only be overcome in a UNE-L framework by requiring the ILECs to unbundle  
21 their IDLC facilities on a digital basis.

22 **Q. CAN THE DEPARTMENT HELP TO ADDRESS THE OPERATIONAL**  
23 **IMPAIRMENT ISSUES YOUHAVE DESCRIBED ABOVE?**

24  
25 A. Yes. However, addressing these issues relative to IDLC technology will require  
26 diligent efforts on the part of the Department as well as Verizon. This results

1 from the fact that the only way to ensure CLECs are not impaired is to ensure that  
2 they have access to the same facilities the ILECs use to serve their own end-user  
3 customers. In the case of IDLC, that can only be accomplished by unbundling the  
4 IDLC technology in an electronic (seamless, no dispatch) manner that provides  
5 the CLEC with access to individual customer circuits at a digital level. Short of  
6 achieving this solution, it seems clear that CLECs will continue to be impaired in  
7 the marketplace (absent UNE-P) as they will be saddled with less effective  
8 facilities to be used in competing for the very same end user customers.

9 **Q. WHY IS THIS SUCH AN IMPORTANT ISSUE?**

10 A. It has been our experience here and in other states that IDLC technology is used to  
11 provide services to upwards of 40%-60% of residential and small business  
12 customers in some exchanges.<sup>15</sup> As a result, absent some resolution of the  
13 problems we have identified above, a significant percentage of the end users in  
14 some exchanges would likely experience either decreased service quality if they  
15 switch to a CLEC's service provided by UNE-L (because their loop will be  
16 changed to a less efficient technology), or they could experience significant delays  
17 in service availability from the CLEC as the ILEC "works around" the IDLC  
18 technology for purposes of providing an alternative facility. In a worse case, such  
19 as where Verizon retires its copper plant, there may be no alternate facility

---

<sup>15</sup> As an example, Massachusetts wire center -specific data relative to IDLC revealed that 44.3% of the lines in Brimfield are served via IDLC. See Verizon's responses to JP-VZ-1-4 and 1-9.

1 available and therefore no way for a CLEC to serve customers at all in those  
2 places served by IDLC loops.<sup>16</sup>

3  
4 **Q. IS IDLC DEPLOYMENT INCREASING?**

5 A. Yes. All indications are that the number of Verizon customers served via IDLC is  
6 increasing, in some circumstances dramatically.<sup>17</sup> As such, the IDLC-related  
7 issues identified above are becoming more and more important on a daily basis.

8 **Q. HOW CAN THE DEPARTMENT ADDRESS THIS ISSUE?**

9 A. As a general matter, the Department should find that CLECs are impaired without  
10 access to unbundled switching and cannot actively serve any market containing  
11 IDLC loops until significant progress is made toward unbundling IDLC. Second,  
12 MCI believes this Department has a unique opportunity to take a leadership role  
13 on this very important issue and require Verizon to provide a *digital* handoff to  
14 CLECs when their customers are served by IDLC. While the actual  
15 implementation of such a ruling will take time and collaborative effort, the  
16 rewards to customers are plentiful. A marketplace wherein each customer's loop  
17 is truly portable between carriers will provide the real world benefits of  
18 competition.

---

<sup>16</sup> ATT asked Verizon in discovery about Verizon's plans to retire copper and the process by which they notify CLECs regarding the plans. Verizon refused to answer, claiming that such information is irrelevant. See Verizon's responses to AT&T-VZ-1-26 and 1-27.

1  
2 **Q. ARE THERE OTHER AREAS THE DEPARTMENT SHOULD ALSO BE**  
3 **FOCUSED ON SPECIFIC TO UNBUNDLED LOOPS THAT WILL HELP**  
4 **TO EASE IMPAIRMENT?**

5  
6 A. Yes, there are. Until IDLC can be digitally unbundled, and even thereafter for  
7 those facilities not served by IDLC, issues relative to accessing high quality,  
8 copper facilities will continue to exist. As fiber-based facilities continue to  
9 expand in use in the network, and as the ILECs continue to retire copper facilities  
10 that have been replaced by those newer technologies, available, high quality  
11 copper loops will become less prevalent and “no facilities available” notices for  
12 UNE loop orders will become more common.  
13 As noted earlier, Verizon refused to provide information about its copper  
14 retirement plans. However, Verizon signaled their intentions with the FCC by  
15 stating that a duty to maintain two networks would impose additional costs.<sup>18</sup>  
16 Thus, CLECs and the Department have no way of knowing when copper will  
17 become unavailable, thereby entirely precluding CLECs from obtaining  
18 unbundled loops.

19 **Q. IS THE AVAILABILITY OF COPPER FACILITIES THE ONLY ISSUE?**

20 A. No. One of the consequences of the FCC’s *TRO* is that it effectively establishes  
21 two separate networks: (1) an ILEC network (packet-based, fiber facilities), and

---

<sup>17</sup> Massachusetts wire center- specific data relative to future IDLC deployment is unavailable, but data provided by Verizon in other jurisdictions reveals that IDLC is frequently used for network upgrades (such as the PARTS initiative) and network expansion.



(2) a largely copper and Time Division Multiplexed – “TDM” – network available to competitors. The FCC’s decision in this regard has numerous negative consequences for the continued development of competition, not the least of which is its impact on an ILEC’s incentive to maintain its copper/TDM network at a level equal to that of its fiber/packet network. The potential exists for situations wherein even if spare copper loops are available, they will not have been maintained at a level that makes them immediately usable for service (i.e., the facilities are effectively “retired in place” and useable only with significant maintenance or restoral activities and resulting expenses). These activities, which must be undertaken on behalf of the CLECs, but not Verizon, delay CLEC access to not only the loops, but the entire market served by those loops.

**Q. GIVEN THE FCC’S TRIENNIAL REVIEW ORDER, ARE THERE STEPS THIS DEPARTMENT CAN TAKE TO ADDRESS THE ISSUE OF AVAILABLE COPPER FACILITIES?**

A. Yes, there are. While the underlying incentive is difficult to properly address within the context of the FCC’s *TRO*, this Department can actively ensure that ILECs maintain and retire their facilities in a non-discriminatory manner, thereby ensuring that maintenance and facility retirements are undertaken pursuant to proper engineering management, and not part of an anti- competitive strategy. Indeed, the FCC’s *TRO* also encourages this type of non-discriminatory treatment:

We require incumbent LECs to make routine network modifications to unbundled transmission facilities used by requesting carriers where the

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<sup>18</sup> *TRO* at ¶ 281, fn 823.

1 requested transmission facility has already been constructed. By ‘routine  
2 network modifications’ we mean that incumbent LECs must perform those  
3 activities that incumbent LECs regularly undertake for their own  
4 customers.<sup>19</sup>  
5

6 **IV. COLLOCATION -RELATED IMPAIRMENT**  
7

8 **Q. IS MCI IMPAIRED AS A RESULT OF ISSUES PERTAINING TO**  
9 **COLLOCATION?**  
10

11 A. As a practical matter, the answer to that question is “yes.” As it stands today,  
12 MCI, and many other CLECs, do not currently have collocation arrangements  
13 (whether they be physical, virtual, etc.) in as ubiquitous a fashion as would be  
14 necessary to serve their UNE-P based mass market customers throughout the  
15 state. Indeed, MCI serves approximately **BEGIN PROPRIETARY \*\*\*\*\***  
16

17 **\*\*\*PROPRIETARY**

18 Massachusetts central offices.<sup>20</sup> If the Department were to reach a conclusion  
19 that MCI was not impaired without UNE-P, literally thousands of MCI’s  
20 customers would be forced to switch providers unless and until MCI could extend  
21 its network in order to serve them via UNE-L.

22 **Q. CAN MCI UTILIZE EELs IN THE NEAR TERM TO SERVE THESE**  
23 **CUSTOMERS AND THEN BUILD OUT ITS FACILITIES TO THOSE**  
24 **OFFICES OVER TIME IF REQUIRED?**

---

<sup>19</sup> TRO, ¶632.

<sup>20</sup> A map of MCI’s collocation facilities in Massachusetts as compared to its UNE-P customer base in the state is attached as Attachment # 3.

1  
2 A. It is best to take those two issues one at a time. First, I discuss the Enhanced  
3 Extended Link (“EEL”) and its potential for assisting UNE-L carriers later in this  
4 testimony. Suffice it to say for now that much development work remains before  
5 EELs can realistically be relied upon to service mass market customers. Second,  
6 it is likely that given proper time, financial wherewithal and potential profitability,  
7 MCI could build out its network and collocate in additional central offices.  
8 However, if the Department is not able to assist the industry in overcoming the  
9 operational issues I have identified above relative to a UNE-L delivery platform  
10 (i.e., hot cuts, IDLC, etc.), there is little incentive for MCI to expend resources for  
11 collocation space that cannot be used to its fullest potential. Moreover, setting  
12 aside questions regarding the extent to which mass market customers can be  
13 economically served based upon a network that includes collocation, it is currently  
14 unclear whether the CLECs as a whole will be able to obtain collocation  
15 arrangements in conjunction with the necessary transport facilities on a timely  
16 basis such that a migration can be supported (keep in mind that in some  
17 Massachusetts wire centers, a number of existing providers may need to procure  
18 incremental collocation space to serve their UNE-P customers). Further,  
19 collocation is a time consuming process that requires CLECs to perform  
20 numerous complex functions and activities that are not required where UNE-P is  
21 available. Each step taken by the CLEC in order to reach the end user customer  
22 through collocation adds time and cost to the process and introduces a probability

1 of error and customer dissatisfaction that is not associated with Verizon's  
2 provision of service to the same customer on a retail basis or with UNE-P.  
3 Finally, questions remain as to whether Verizon will develop hot cut processes  
4 whereby it will cut a UNE loop to an EEL arrangement via the batch hot cut  
5 process, thereby, further limiting the applicability of EELs in situations where  
6 collocation is not available.

7 **Q. HOW COULD THE DEPARTMENT REMEDY THESE POTENTIAL**  
8 **PROBLEMS?**

9  
10 A. To the extent the Department enters at some future date a finding of non  
11 impairment relative to unbundled switching, it is my recommendation that the  
12 Department implement backstop measures related to collocation. Specifically, to  
13 the extent that a CLEC's ability to access its end-users is effectively delayed or  
14 otherwise impeded as a result of Verizon's collocation performance, the  
15 Department should mandate that unbundled switching remain available to such  
16 carriers and in such locations where mass market customers are concerned.  
17 Moreover, to the extent that collocation is ultimately implemented in such a  
18 location, the CLEC should have the choice to leave any remaining customers on  
19 UNE-P until such time as a migration to UNE-L is operationally feasible.  
20

21 **V. TRANSPORT -RELATED IMPAIRMENT**

22  
23 **Q. WHY HAVE YOU INCLUDED TRANSPORT IN THE SAME SECTION**  
24 **OF YOUR TESTIMONY AS COLLOCATION?**

1  
2 A. Transport and collocation are intrinsically related in terms of the functions they  
3 perform in a typical CLEC network. Availability of and access to collocation  
4 space is meaningless in a CLEC network unless the CLEC is able to reach the end  
5 user customer's loop and extend it to its own switch via available transport  
6 capacity. Therefore, collocation without available transport, and vice versa,  
7 renders a UNE-L framework unusable. Indeed, this Department can consider the  
8 UNE-L framework to be a very complex chain, each link of which must be  
9 procured, assigned, provisioned and maintained in order for customers to receive  
10 telephone services without disruption. Each link is subject to its own issues and  
11 complications, but each link is equally important in terms of providing the  
12 ultimate service (a break in any single link is a break in the chain). Any single  
13 component of the service, including transport, has the potential to take the  
14 customer out of service if something goes wrong.

15 **Q. DOES TRANSPORT POSE CHALLENGES IN AND OF ITSELF?**

16 It certainly can. In a situation where CLECs are replacing UNE-P with UNE-L,  
17 they will rely heavily on their ability to utilize Verizon- provided transport in  
18 order to extend individual customer loops to their own local switching facilities.  
19 Additionally, CLECs will be largely dependent upon Verizon- provided transport  
20 in order to originate and terminate local, intraLATA and interLATA traffic on  
21 behalf of their end users that, heretofore, had been carried within the Verizon  
22 network via shared transport. Moreover, CLECs will likely utilize Verizon-

1 provided transport in order to establish 911 trunk groups and, albeit to a lesser  
2 extent, OS and DA trunk groups. The sheer magnitude of blanketing a state or  
3 even a LATA with collocation arrangements and the transport facilities described  
4 herein can become daunting from a logistic and economic perspective. Given that  
5 these transport requirements are, for the most part, over and above those already  
6 required by a UNE-P based CLEC, the logistical and financial ramifications  
7 flowing from these requirements may lead to real operational and/or economic  
8 impairment.

9 **Q. PLEASE DISCUSS SPECIFIC OPERATIONAL ISSUES WHICH MAY**  
10 **GIVE RISE TO IMPAIRMENT.**

11  
12 A. It is unclear whether Verizon's network is currently set up to accommodate the  
13 CLECs' need for transport both in terms of their need to extend loops (whether  
14 via collocation and interoffice transport arrangements or via Enhanced Extended  
15 Links, or EELs) to their own switches or in terms of meeting demand for the  
16 transport necessary to originate and terminate traffic. As such, it is unclear  
17 whether Verizon will claim that "facilities are not available," rendering a  
18 migration from UNE-P to UNE-L doubtful at best. Moreover, it is unclear  
19 whether Verizon will claim that as a result of the *TRO*, they are not required to  
20 provide transport to requesting carriers in any or all of the circumstances  
21 identified above. Indeed, if the necessary physical connections cannot be  
22 obtained, or are substantially delayed, CLECs will be operationally impaired, if  
23 not physically precluded from accessing customers.

1       **Q.   PLEASE EXPLAIN IN MORE DETAIL YOUR CONCERNS RELATED**  
2       **TO TRANSPORT CAPACITY REQUIRED TO ORIGINATE AND/OR**  
3       **TERMINATE TRAFFIC.**

4  
5       A.   When a customer is served via UNE-P, his/her local calls are routed just as any  
6       other Verizon retail customer's calls would be routed. As such, the majority of  
7       that traffic is routed either within the same Verizon switch (i.e., an intra-switch  
8       call) or to another switch within the same local calling area, which is connected to  
9       the caller's originating switch via a direct-trunked connection. As local networks  
10      have evolved, trunk groups directly connecting end office switches within a local  
11      area have become more common and most ILEC networks today rely heavily on  
12      substantial levels of inter-office direct trunking. Absent these direct trunks,  
13      tandem switches would be required to route all intra- and inter-switch calls.

14      **Q.   WILL THESE TRAFFIC PATTERNS CHANGE IF CLECS ARE**  
15      **REQUIRED TO UTILIZE A UNE-L DELIVERY STRATEGY?**

16  
17      A.   Yes, they will change. As described above, in a UNE-L strategy, the CLEC  
18      collocates equipment in the ILEC's central office and routes the customer's traffic  
19      back to its own switching facility. Hence, every call made by the customer (local,  
20      long distance, etc.) will be routed through the CLEC's switch instead of the  
21      ILEC's switch. Likewise, the CLEC's switch is then interconnected with the  
22      ILEC's network either at the tandem (the vast majority of connections occur at the  
23      tandem), or via direct connections to high volume end offices. The entirety of the  
24      customer's local traffic that is intended for ILEC customers (presumably the  
25      majority of the customer's calls given that the ILEC will still serve the majority of

1 local customers) must now pass through the interconnection trunks established by  
2 the CLEC and the ILEC, instead of through the ILEC's direct end office trunks as  
3 has historically been the case. In short, moving as much as 25% of the local  
4 customer base from UNE-P to UNE-L will immediately and dramatically change  
5 the traffic patterns for millions of customers. I simply don't believe the  
6 implications relative to this type of fundamental shift in traffic patterns, and the  
7 additional trunking resources required to accommodate it, have been thoroughly  
8 examined.

9 **Q. DO THESE TRAFFIC PATTERN CHANGES HAVE THE POTENTIAL**  
10 **TO IMPAIR CLECS AND AFFECT A CLEC'S ABILITY TO ACTIVELY**  
11 **PROVIDE SERVICE TO LOCAL CUSTOMERS VIA UNBUNDLED**  
12 **LOOPS?**

13  
14 A. Absolutely. Even if (1) the hot cut process worked smoothly, (2) the CLEC could  
15 somehow gain unfettered access to the customer's loop, (3) collocation could be  
16 arranged and (4) the CLEC could transport the customer's traffic back to its own  
17 switch, the CLEC could still face severe, customer impacting problems if the  
18 ILEC failed to provide adequate trunking for purposes of terminating traffic  
19 originated on the CLEC network. Unfortunately, where the ILEC fails to meet this  
20 benchmark, it is the CLEC who bears the brunt of the failure because it is the  
21 CLEC's customers who will experience network busy signals when they attempt  
22 to place local calls to an ILEC customer.

23 **Q. CAN YOU QUANTIFY THE POTENTIAL IMPACT OF THIS PROBLEM**  
24 **IN TERMS OF QUALITY DEGRADATION?**  
25



1 A. No. We are continuing to assess this issue and its potential impact on service  
2 quality standards.

3 **Q. CAN THE ISSUES LEADING TO IMPAIRMENT RELATIVE TO**  
4 **TRANSPORT BE ADDRESSED IN SUCH A WAY THAT MCI COULD**  
5 **PURSUE ITS PLAN TO MOVE TO A UNE-L STRATEGY?**

6  
7 A. To the extent the Department intends to foster the expansion of a UNE-L strategy  
8 and, therefore, intends to minimize transport related issues that may give rise to  
9 impairment, it should consider, at a minimum, 1) initiating proceedings that  
10 examine and ultimately provide for EELs as discussed more fully later in this  
11 testimony, 2) continued availability of transport, and 3) backstop measures that  
12 provide for use of unbundled switching for mass market customers where  
13 transport is not reasonably available. Specifically, the following issues must be  
14 addressed:

15 1. MCI requires access to enhanced links (EELs). I will discuss this in the  
16 next section of my testimony in detail, but a great deal of the impairment  
17 issues surrounding transport may be alleviated if EELs allowing access to  
18 ILEC transport were made available to MCI under the UNE-P benchmark  
19 conditions.

20  
21 2. MCI must rely on ILECs to provide UNE transport where requested for  
22 local purposes, particularly to and from COs where unbundled switching is  
23 unavailable and for purposes of carrying end-user traffic necessary to  
24 support a UNE-L entry strategy.

25  
26 3. If the ILEC is unable or unwilling to meet the transport needs of MCI  
27 and other CLECs, unbundled local switching must remain available in  
28 order to serve mass market customers in Massachusetts.  
29

1       **VI. THE ENHANCED EXTENDED LINK (“EEL”) AS A DS0 LOOP**  
2       **TRANSPORT TOOL**  
3

4       **Q. IF A STATE COMMISSION FINDS THAT MCI AND OTHER CLECS**  
5       **ARE IMPAIRED, IN PART BECAUSE OF TRANSPORT RELATED**  
6       **PROBLEMS, CAN STATE COMMISSIONS WORK TOWARD**  
7       **REDUCING THAT IMPAIRMENT?**  
8

9       A. Yes, they can and MCI would encourage them to do so. Toward that end, MCI  
10       has identified a number of transport-related issues that should be addressed. For  
11       example, MCI believes that EELs could play a large role in overcoming issues  
12       contributing to impairment relative to transport facilities; however, MCI also  
13       believes that EELs have a long way to go in terms of continued development  
14       before they can be realistically used to serve mass market customers. In short,  
15       while there are areas wherein continued development on the part of the industry  
16       could mitigate the issues that lead to today’s impairment, direct and continuous  
17       Department involvement will be required to make any realistic progress in these  
18       areas. MCI has identified the following actions that state commissions should  
19       undertake relative to transport and its potential impact on impairment for mass  
20       market switching:

21  
22       (1) Review the testimony and evidence relative to loop and transport  
23       impairment in an attempt to spot areas wherein the ILEC insists triggers  
24       have been met for mass market switching, yet the ILEC may be attempting  
25       to remove the very UNE transport those triggering carriers use to provide  
26       the local services constituting the mass market switching trigger. In other  
27       words, if the ILEC insists a carrier providing UNE-L service in a given  
28       area should constitute a mass market switching trigger, the Department  
29       should take a close look at whether the ILEC is likewise attempting to

1 remove its obligation to provide UNE transport to that very same carrier.  
2 It is likely that the financial and operational issues associated with that  
3 “triggering” CLEC will change dramatically (perhaps even fundamentally  
4 altering its ability to continue to provide service), if that carrier can no  
5 longer purchase transport from Verizon on a UNE basis.

6  
7 (2) State commissions should work with ILECs and CLECs alike to  
8 provide UNE transport arrangements aimed more directly at serving the  
9 mass market. EELs are a primary example. To this point, EELs have been  
10 used primarily for high volume customers with substantial amounts of  
11 access traffic. Their use in supporting local services to multiple, individual  
12 customers requiring only a few DS0 circuits is largely untested.  
13 Nonetheless, EELs have the potential to substantially reduce the  
14 collocation-related costs.

15  
16  
17 **Q. PLEASE EXPLAIN YOUR POINT REGARDING THE POTENTIAL**  
18 **CONNECTION BETWEEN MASS MARKET SWITCHING**  
19 **IMPAIRMENT AND UNE TRANSPORT IMPAIRMENT.**

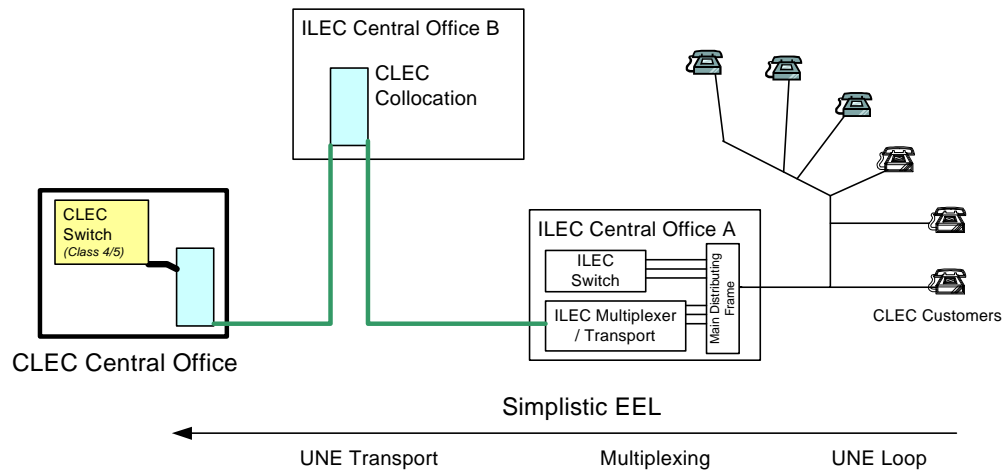
20  
21 A. Changes in the availability of UNE transport for existing CLECs providing  
22 facilities based services could dramatically alter those CLECs’ capabilities to  
23 continue providing services. Removing the ILEC’s obligation to provide UNE  
24 transport within a given market has the potential to dramatically affect the process  
25 by which those “triggering” carriers access transport capacity. They would largely  
26 be left to fend for transport in a wholesale transport environment or potentially  
27 pay substantially higher ILEC special access rates. As such, a decision to remove  
28 UNE transport from the UNE list in a given market has the potential to  
29 dramatically impact whether a carrier could be considered a “trigger” with respect  
30 to the FCC’s analysis specific to mass market switching impairment. This

1 Department should be cognizant of this relationship as they evaluate the evidence  
2 provided by ILECs specific to impairment for switching and transport.

3 **Q. PLEASE EXPLAIN YOUR SECOND CONSIDERATION ABOVE**  
4 **RELATIVE TO DS0-RELATED TRANSPORT ARRANGEMENTS BY**  
5 **DESCRIBING AND DEFINING AN EEL.**

6  
7 A. EELs are nothing more than a combination of unbundled loops, the potential for  
8 multiplexing, and unbundled interoffice transport. The diagram below provides a  
9 simplistic example:  
10

## Simple EEL<sup>21</sup>



As noted above, the primary advantage of an EEL is that a competitive carrier using an EEL need not collocate in every ILEC central office where it chooses to serve a customer. By combining the unbundled loop with interoffice transport (and the ability to multiplex smaller capacity, customer-specific circuits onto larger, more efficient interoffice circuits), the CLEC is able to “extend” the loop directly to its own central office. In most cases multiple transport facilities from multiple ILEC end offices, each carrying multiple loops, would terminate in one

<sup>21</sup> The diagram depicts the transport facility from Central Office A ultimately reaching the CLEC’s Central Office via routing through the CLEC’s collocation space in Central Office B. While no operational benefit is achieved through this architecture (i.e., the need for a collocation somewhere in the LATA), the FCC’s *TRO* appears to require at least one collocation arrangement in the LATA for purposes of terminating an EEL.

1 ILEC central office before being transported to the CLEC's Central Office. This  
2 advantage is important for several reasons. First, EELs allow a carrier to build a  
3 customer concentration in an ILEC central office before expending considerable  
4 resources to build a collocation cage. This not only speeds the competitive  
5 carrier's products to market (without the need for an expensive and sometimes  
6 time-consuming collocation process), but also allows the carrier to make an  
7 economically rational decision (based primarily upon customer take rates) relative  
8 to allocating finite collocation resources. Second, without the need for a costly  
9 collocation in each central office, the economics of a UNE-L strategy can be  
10 improved. Finally, and most importantly, EELs are but another method by which  
11 competing carriers can attempt to gain economies of scale and scope similar to  
12 that of their primary competitors, the ILECs. By spreading the costs of switching  
13 equipment over a greater number of customers (by gaining access to numerous  
14 central offices without incurring corresponding collocation costs) competitors can  
15 substantially reduce their average costs per-customer, hopefully approaching  
16 average cost levels enjoyed by the incumbent (who enjoys a network built and  
17 engineered to accommodate 100% of the market).

18 **Q. DOES THE INDUSTRY HAVE MUCH EXPERIENCE WITH EELS USED**  
19 **TO SUPPORT DS0-BASED SERVICES LIKE THOSE THAT WOULD BE**  
20 **REQUIRED TO PROVIDE MASS MARKET OFFERINGS?**

21  
22 A. No. While UNE-P is a proven mechanism by which to provide competitive  
23 services to mass market customers in an efficient and economical manner, UNE-L

1 fueled by increased reliance on DS0-based EELs is almost completely untried and  
2 certainly unproven. Very little, if any, real world experience exists in support of  
3 the notion that EELs can actually be used effectively as a DS0 transport option on  
4 any scalable, commercially viable basis.

5  
6 **Q. WHAT CAN THE DEPARTMENT DO TO ENHANCE THE ABILITY OF**  
7 **CLECS TO USE EELS EFFECTIVELY IN A UNE-L ENVIRONMENT?**  
8

9 A. State commissions can focus their attention on two primary EELs- related  
10 objectives that will dramatically increase the likelihood that EELs can, in the  
11 future, be used effectively in a mass market scenario: (1) Commissions can  
12 ensure that any approved ILEC Transitional Batch Hot Cut and Mass Market  
13 Migration Hot Cut processes include detailed information and processes related to  
14 “cutting” a UNE loop to an EEL arrangement, and (2) the Department can (and  
15 should) explore arrangements related to “concentrated” EELs. There is an  
16 opportunity here for this Department to elevate EELs to a more effective platform  
17 capable of enhancing the likelihood of UNE-L success (and as such, the likelihood  
18 mass market customers will enjoy competitive alternatives from carriers other  
19 than those relying solely on UNE-P).

20  
21 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

22 A. Yes, it does.

